

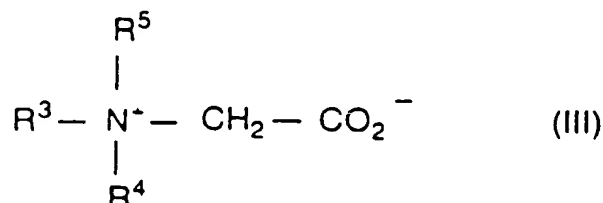
**(12) PATENT ABRIDGMENT (11) Document No. AU-B-59911/94**  
**(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 687780**

- (54) Title  
DISHWASHING DETERGENT
- (51)<sup>5</sup> International Patent Classification(s)  
C11D 001/14
- (21) Application No. : 59911/94 (22) Application Date : 06.01.94
- (87) PCT Publication Number : WO94/16042
- (30) Priority Data
- (31) Number (32) Date (33) Country  
003150 12.01.93 US UNITED STATES OF AMERICA
- (43) Publication Date : 15.08.94
- (44) Publication Date of Accepted Application : 05.03.98
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- (56) Prior Art Documents  
US 3849548  
US 4329334  
US 4554098
- (57) Claim

1. In a liquid manual dishwashing detergent composition, the improvement wherein the surfactant component thereof consists of about equal parts by weight of a compound of the formula I:



wherein  $R^1$  is an alkyl group having from 10 to 18 carbon atoms and M is an alkali metal cation, alkaline earth metal cation, or ammonium ion and a compound of the formula III:

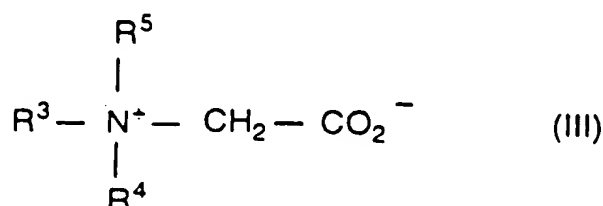


wherein  $R^3$  is an alkyl or alkenyl group having from 10 to 18 carbon atoms;  $R^4$  and  $R^5$  are each independently an alkyl group having from 1 to 4 carbon atoms, a 2-hydroxyethyl group or a 2-hydroxypropyl group.

3. In a liquid manual dishwashing detergent composition, the improvement wherein the surfactant component thereof consists of about equal parts by weight of a compound of the formula II:

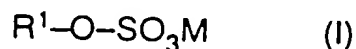


wherein  $R^2$  is an alkyl or alkenyl group having from 10-18 carbon atoms and M is an alkali metal cation, alkaline earth metal cation, or ammonium ion and a compound of the formula III:

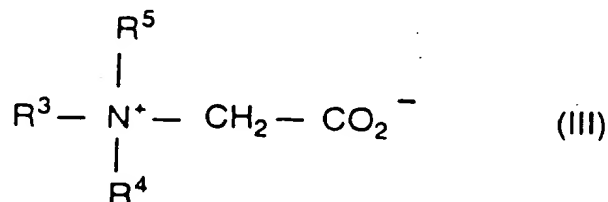


wherein  $R^3$  is an alkyl or alkenyl group having from 10 to 18 carbon atoms;  $R^4$  and  $R^5$  are each independently an alkyl group having from 1 to 4 carbon atoms, a 2-hydroxyethyl group or a 2-hydroxypropyl group.

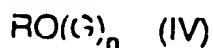
5. In a liquid manual dishwashing detergent composition, the improvement wherein the surfactant component thereof consists of (a) from 16% to 18% by weight of a compound of the formula I:



wherein  $R^1$  is an alkyl group having from 10 to 18 carbon atoms and M is an alkali metal cation, alkaline earth metal cation, or ammonium ion; (b) from 2% to 4% by weight of a compound of the formula III:

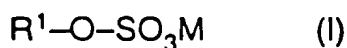


wherein  $R^3$  is an alkyl or alkenyl group having from 10 to 18 carbon atoms;  $R^4$  and  $R^5$  are each independently an alkyl group having from 1 to 4 carbon atoms, a 2-hydroxyethyl group or a 2-hydroxypropyl group; and (c) from 8% to 10% by weight of an alkyl polyglycoside compound of the formula IV

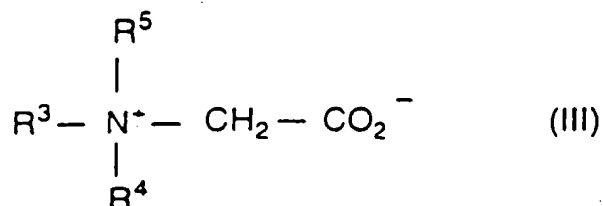


wherein R is a monovalent organic radical containing from one to about 30 carbon atoms; G represents a moiety derived from a reducing saccharide containing 5 or 6 carbon atoms; and n is a number having an average value from 1 to about 6.

7. In a liquid manual dishwashing detergent composition, the improvement wherein the surfactant component thereof consists of (a) from 4% to 4.5% by weight of a compound of the formula I:



wherein R<sup>1</sup> is an alkyl group having from 10 to 18 carbon atoms and M is an alkali metal cation, alkaline earth metal cation, or ammonium ion; (b) from 0.5 / to 1% by weight of a compound of the formula III:



wherein R<sup>3</sup> is an alkyl or alkenyl group having from 10 to 18 carbon atoms; R<sup>4</sup> and R<sup>5</sup> are each independently an alkyl group having from 1 to 4 carbon atoms, a 2-hydroxyethyl group or a 2-hydroxypropyl group; and (c) from 2% to 2.5% by weight of a compound of the formula II:

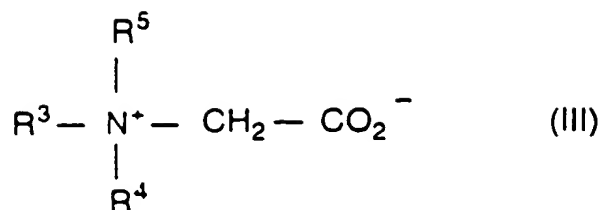


wherein R<sup>2</sup> is an alkyl or alkenyl group having from 10-18 carbon atoms and M is an alkali metal cation, alkaline earth metal cation, or ammonium ion.

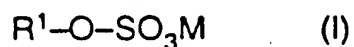
9. In a liquid manual dishwashing detergent composition, the improvement wherein the surfactant component thereof consists of: (a) from 4% to 4.5% by weight of a compound of the formula II:



wherein R<sup>2</sup> is an alkyl or alkenyl group having from 10-18 carbon atoms and M is an alkali metal cation, alkaline earth metal cation, or ammonium ion; (b) from 0.6 / to 1% by weight of a compound of the formula III:



wherein  $\text{R}^3$  is an alkyl or alkenyl group having from 10 to 18 carbon atoms;  $\text{R}^4$  and  $\text{R}^5$  are each independently an alkyl group having from 1 to 4 carbon atoms, a 2-hydroxyethyl group or a 2-hydroxypropyl group; and (c) from 2% to 2.5 / by weight of a compound of the formula I:



wherein  $\text{R}^1$  is an alkyl group having from 10 to 18 carbon atoms and M is an alkali metal cation, alkaline earth metal cation, or ammonium ion.